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DISASTER REDUCTION AND RELIEF

Fight against the screw-worm infestation

Note by the Secretary-General

The Secretary-General has the honour to transmit to the members of the Economic and Social Council the report of the Director-General of the Food and Agriculture Organization of the United Nations on the screw-worm infestation and efforts undertaken to eradicate it, prepared in accordance with Council resolution 1990/61, paragraph 5.

Annex

FIGHT AGAINST THE SCREW-WORM INFESTATION

Report of the Director-General of the Food and Agriculture Organization of the United Nations

SUMMARY

The New World screw-worm was introduced into the Libyan Arab Jamahiriya in 1988. As a consequence, a dramatic increase in myiasis infestations in livestock has been experienced over the last two years, with over 12,000 cases reported in 1990. It was recognized that the further spread of the fly could have catastrophic consequences for livestock and wildlife in Africa, and FAO immediately implemented emergency actions to contain the disease through technical cooperation programme support to all North African countries under risk. The value of this support amounted to $US 2,036,000.

Realizing the emergency nature of the situation and the need to implement eradication measures whilst the infested area remained of manageable proportions, FAO initiated such action through the establishment of the Screw-worm Emergency Centre for North Africa. This resulted in the selection of the Sterile Insect Technique, successfully used in the Americas, as the technique of choice and, in conjunction with various other international agencies, the development of a programme document and the procurement of substantial funding support.

The eradication technique was then field-tested under a preparatory phase and the logistical and material support for a large-scale eradication campaign identified and established. The full-scale programme then commenced in February 1991 and consists of weekly transatlantic shipments of millions of sterile insects from Mexico for dispersal over the infested area. Initial results are extremely positive, with screw-worm cases in January to April 1991 reduced to 6 from the 386 recorded over the same period in the previous year.

Introduction

1. The New World screw-worm was discovered in North Africa in 1988, prior to which it was confined to areas of suitable habitat on the American continent where it has historically been recognized as a major constraint to the economic development of livestock production, and severely suppressive to wildlife populations. From the onset of its introduction it was evident that similar catastrophic effects would be experienced throughout the region should the screw-worm be allowed to spread beyond the confined area of infestation, approximately 25,000 km^2. During 1990, 12,068 cases of myiasis were reported and confirmed in domestic livestock.

2. Realizing the need to initiate an eradication programme based on the use of the sterile insect technique, which had successfully eradicated the fly from the southern United States of America and Mexico, steps were taken, in collaboration with the authorities most directly concerned and the Governments of surrounding countries under risk of invasion, to contain the outbreak, to accurately determine limits of distribution and to control the incidence of myiasis. At the same time the Director-General of the Food and Agriculture Organization of the United Nations (FAO) established the Screw-worm Emergency Centre for North Africa (SECNA) to coordinate activities and to establish and undertake a programme to eradicate the fly from North Africa, including the procurement of funds required for this purpose.

Disease and vector containment

3. FAO technical cooperation programme projects having a total value of $US 2,036,000 were initiated in 1989 to support training, surveys and public information campaigns; screw-worm surveillance, identification and treatment; and the formation of national plans to combat screw-worm invasions in the affected area and surrounding African countries considered under imminent and medium-term risk. Through these activities it has been ascertained that the infestation remains confined to the area of original infestation. At the same time, the countries concerned have developed a state of readiness for field operations.

4. Intensive field activities, initially undertaken by the concerned Governments with the support of the FAO-executed "Pilot Project for the Eradication of Screw-worm from North Africa" and funded by the International Fund for Agricultural Development (IFAD), the African Development Bank (AfDB), the United Nations Development Programme (UNDP) and FAO, have successfully contained the disease, determined the limits of infestation and, through the control of animal movement, considerably restricted the spread of the fly into new areas. The result of these activities can be judged by a comparison of monthly disease incidence: in January and February 1990, 102 and 94 cases were recorded, while in the same months of 1991 they were reduced to only 3 and 2 respectively.

Eradication programme

5. The necessary actions have been undertaken during the preparatory phase of the eradication campaign to confirm the feasibility of transferring the Sterile Insect Technique developed in America to the North African situation, using sterile insects supplied from a breeding plant in Mexico. The sexual compatibility of the Mexican strains with the wild Libyan population and the feasibility of long-distance air transport without loss in the physical quality of laboratory-reared flies have been confirmed. All logistical requirements for large-scale operations have also been identified, procured and tested, including the weekly aerial release of sterile insects over a pilot area of some 6,000 km^2. That involved the procurement, transport, handling and dispersal of eight weekly shipments of from 3.5 to 7 million sterile insects each, undertaken between December 1990 and February 1991.

6. The monitoring of sterile fly behaviour, sexual competitiveness and physical behaviour over that period confirmed the feasibility of the intended eradication programme. As a result, the last two consignments of sterile insects were increased to 10.5 million each and dispersed to treat the entire infested area. That proved highly successful and has heralded the start of eradication activities. Uninterrupted weekly deliveries of increasing numbers of sterile flies are now under way with the intention to achieve optimum weekly releases of 50 million by mid-1991. It is anticipated that, providing these intensive operations are maintained throughout the year, eradication may be possible by December 1991.

International cooperation

7. As the lead agency within the United Nations system for screw-worm eradication, FAO continued its coordinating role during the period 1990-1991 through the Screw-worm Emergency Centre for North Africa. The Centre has provided newsletters on the situation and the progress of activities, including information on assistance requested and pledged. Cooperation has been further strengthened through the regular convening of technical action groups and consultative meetings with representatives from the donor communities. The total amount of donor assistance received and pledged has now reached $US 30 million. The amount required for 1991 is calculated at $US 56 million, and it is critical that the balance of these funds be procured without further delay so that commitment to contracts for the procurement, transport and dispersal of sterile flies can be made without jeopardizing ongoing operations.

Research

8. In order to guarantee the biological result of the programme and in view of the need to adapt a control technique which has been specifically developed for the Americas to North African conditions, several areas have been identified where research and development support may be required. The responsibility for coordination of these activities is delegated to the Joint FAO/International Atomic Energy Agency (IAEA) Division, Vienna.

9. At a research planning workshop held in December 1990, priority areas for investigation were identified. They included effects of long-range transportation and storage on sterile fly quality, with recommendations for improved techniques; the continuous confirmation of the sexual compatibility between wild and laboratory-reared strains; the development and improvement of existing methods of population suppression; and identifying better ways of treating infested animals.

10. The research programme, which is donor supported, is undertaken through cooperation with technical agencies in both donor and recipient countries.

Conclusion

11. The Director-General of FAO would like to express his appreciation to all donors that have contributed resources to the screw-worm eradication programme. In that regard, special mention should be made of the significant contribution provided and the full cooperation given to the programme by the Government of the Libyan Arab Jamahiriya. The undetected carriage of the screw-worm from the American continent to North Africa serves to illustrate the vigilance required by both importing and exporting countries if the introduction of exotic pests and their devastating consequences are to be avoided in the future.